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Title of contribution: The Effect of Two Lensing Galaxies on the Time Delay in PKS1830-211

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Abstract:

The gravitational lens PKS 1830-211 has the potential to be one of the best lenses for estimating H$_{\circ}$. Most of the lensing is caused by a single galaxy at z=0.89, and the background source redshift and time delay are now known. A value of H$_{\circ} \approx 65$ km s^{-1} Mpc^{-1} has been found using the single lens model of Nair, Narasimha, and Rao (1993, ApJ, 407, 46). However, there is a second galaxy at z=0.19 along the line of sight which will affect the observed time delay. We consider the effect of this lower redshift galaxy on the estimate of H$_{\circ}$, and show that for plausible sky positions of the closer galaxy (constrained by the CASTLES NICMOS images) the effect is to reduce the value of H$_{\circ}$ to 40-60 km s^{-1} Mpc^{-1}. This research was carried out at the Jet Propulsion Laboratory, California Institute of Technology.